

## CLAIMS

1. An information record medium on which there are recorded:  
video information to indicate a main-video;  
5 sub-video information to indicate a sub-video displayable at  
least partially over the main-video; and  
sub-video control information including (i) sub-frame range  
information to indicate at least a partial area of the sub-video as a  
sub-frame and (ii) shadow display control information to add a  
10 shadow selectively to a sub-video part within the sub-frame in  
accordance with an alpha value indicating transparency of the  
sub-video part, and display the sub-video part to which the shadow  
is added over the main-video.
- 15 2. The information record medium according to claim 1, wherein  
the shadow display control information includes information  
to add the shadow relative to an opaque part of the sub-video part  
within the sub-frame having the alpha value equal to or more than a  
predetermined value or threshold, or relative to an transparent part  
20 of the sub-video part within the sub-frame having the alpha value  
equal to or less than a predetermined value or threshold, and  
display the part to which the shadow is added.
3. The information record medium according to claim 1, wherein  
25 the shadow display control information includes information  
to add the shadow relative to a letter or design having an outline

within the sub-frame, and display the letter or design to which the shadow is added.

4.     The information record medium according to claim 1, wherein  
5       the shadow display control information includes information  
to add the shadow relative to an outline of the sub-frame, and  
display the outline to which the shadow is added.
5.     The information record medium according to claim 1, wherein  
10      the shadow display control information includes information  
to virtually define a disposition of a light source relative to the  
shadow and a disposition of a surface on which the shadow is  
projected.
- 15    6.     The information record medium according to claim 1, wherein  
the shadow display control information includes information  
to define color of the shadow.
7.     The information record medium according to claim 1, wherein  
20      the shadow display control information includes information  
to define a blurring degree of the shadow.
8.     The information record medium according to claim 1, wherein  
the main-video information, the sub-video information and  
25    the sub-video control information are divided into predetermined  
packet units and multiplexed, and further streamed relatively into a

video stream composed of the divided main-video information, a sub-picture stream composed of the divided sub-video information and a control information stream composed of the divided sub-video control information.

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9. An information record apparatus comprising:

a first record device for recording video information to indicate a main-video;

10 a second record device for recording sub-video information to indicate a sub-video displayable at least partially over the main-video; and

a third record device for recording sub-video control information including (i) sub-frame range information to indicate at least a partial area of the sub-video as a sub-frame and (ii) shadow display control information to add a shadow selectively to a sub-video part within the sub-frame in accordance with an alpha value indicating transparency of the sub-video part, and display the sub-video part to which the shadow is added over the main-video.

20 10. An information record method comprising:

a first record process of recording video information to indicate a main-video;

a second record process of recording sub-video information to indicate a sub-video displayable at least partially over the main-video; and

25 a third record process of recording sub-video control

information including (i) sub-frame range information to indicate at least a partial area of the sub-video as a sub-frame and (ii) shadow display control information to add a shadow selectively to a sub-video part within the sub-frame in accordance with an alpha value indicating transparency of the sub-video part, and display the sub-video part to which the shadow is added over the main-video.

11. An information reproduction apparatus for reproducing the information record medium according to claim 1, said information reproduction apparatus comprising:

a reproduction device for reproducing the video information, the sub-video information and the sub-video control information;

a display output device capable of displaying and outputting the reproduced sub-video information over the reproduced video information; and

a control device for controlling the display output device to add a shadow to the sub-video part within the sub-frame, and display the sub-video part to which the shadow is added over the main-video, on the basis of the shadow display control information in the reproduced sub-video control information.

12. An information reproduction method of reproducing the information record medium according to claim 1, said information reproduction method comprising:

a reproduction process of reproducing the video information, the sub-video information and the sub-video control information;

and

a control process of controlling a display output device capable of displaying and outputting the reproduced sub-video information over the reproduced video information to add a shadow to the sub-video part within the sub-frame, and display the sub-video part to which the shadow is added over the main-video, on the basis of the shadow display control information in the reproduced sub-video control information.

10 13. An information record reproduction apparatus comprising:

a first record device for recording video information to indicate a main-video;

a second record device for recording sub-video information to indicate a sub-video displayable at least partially over the main-video; and

15 a third record device for recording sub-video control information including (i) sub-frame range information to indicate at least a partial area of the sub-video as a sub-frame and (ii) shadow display control information to add a shadow selectively to a sub-video part within the sub-frame in accordance with an alpha value indicating transparency of the sub-video part, and display the sub-video part to which the shadow is added over the main-video;

a reproduction device for reproducing the video information, the sub-video information and the sub-video control information;

20 a display output device capable of displaying and outputting the reproduced sub-video information over the reproduced video

information; and

a control device for controlling the display output device to add a shadow to the sub-video part within the sub-frame, and display the sub-video part to which the shadow is added over the main-video, on the basis of the shadow display control information in the reproduced sub-video control information.

14. An information record reproduction method comprising:

a first record process of recording video information to indicate a main-video;

a second record process of recording sub-video information to indicate a sub-video displayable at least partially over the main-video; and

a third record process of recording sub-video control information including (i) sub-frame range information to indicate at least a partial area of the sub-video as a sub-frame and (ii) shadow display control information to add a shadow selectively to a sub-video part within the sub-frame in accordance with an alpha value indicating transparency of the sub-video part, and display the sub-video part to which the shadow is added over the main-video;

a reproduction process of reproducing the video information, the sub-video information and the sub-video control information; and

a control process of controlling a display output device capable of displaying and outputting the reproduced sub-video information over the reproduced video information to add a shadow

to the sub-video part within the sub-frame, and display the sub-video part to which the shadow is added over the main-video, on the basis of the shadow display control information in the reproduced sub-video control information.

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15. A computer program for a record control to control a computer disposed at the information record apparatus according to claim 9, said computer program making the computer function as at least a part of the first record device, the second record device and  
10 the third record device.

16. A computer program for a reproduction control to control a computer disposed at the information reproduction apparatus according to claim 11, said computer program making the computer  
15 function as at least a part of the reproduction device, the display output device and the control device.

17. A computer program for a record reproduction control to control a computer disposed at the information record reproduction  
20 apparatus according to claim 13, said computer program making the computer function as at least a part of the first record device, the second record device, the third record device, the reproduction device, the display output device and the control device.

25 18. A data structure including a control signal, said structure including:

video information to indicate a main-video;  
sub-video information to indicate a sub-video displayable at  
least partially over the main-video; and  
sub-video control information including (i) sub-frame range  
5 information to indicate at least a partial area of the sub-video as a  
sub-frame and (ii) shadow display control information to add a  
shadow selectively to a sub-video part within the sub-frame in  
accordance with an alpha value indicating transparency of the  
sub-video part, and display the sub-video part to which the shadow  
10 is added over the main-video.